

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-19. (cancelled)

20. (currently amended) A protein crystal comprising consisting of: the processivity clamp factor of DNA polymerase, and a peptide of about 3 to about 30 amino acids, in particular of about 16 amino acids, said peptide comprising all or part of the processivity clamp factor binding sequence of a processivity clamp factor interacting protein, such as prokaryotic Pol I, Pol II, Pol III, Pol IV, Pol V, MutS, ligase I, α subunit of DNA polymerase, UmuD or UmuD', or eukaryotic pol ϵ , pol δ , pol η , pol ι , pol κ ,

a processivity clamp factor of DNA polymerase that is the β subunit of DNA polymerase polymerase III of *Escherichia coli* and has the amino acid sequence of SEQ ID NO 5; and

a peptide of 16 amino acids having the amino acid sequence of VTLLDPQMERQLVLGL (SEQ ID NO: 1),

wherein said protein crystal is triclinic and has cell dimensions of: $a = 41.23 \text{ \AA}$, $b = 65.22 \text{ \AA}$, $c = 73.38 \text{ \AA}$, $\alpha = 73.11^\circ$, $\beta = 85.58^\circ$, and $\gamma = 85.80^\circ$.

21-22. (cancelled)

23. (currently amended) A The protein crystal according to claim 2220, eharacterized the bysaid protein crystal having atomic coordinates such as obtained by the X-ray diffraction of said protein crystal, said atomic coordinates being represented in Figure 1.

24. (currently amended) A The protein crystal according to claim 2220 or 23, eharacterized the by thesaid protein crystal having atomic coordinates representing the peptide and the peptide binding site of the β subunit of DNA polymerase III of *Escherichia coli*, and wherein said atomic coordinates are being as follows:

ATOM	4045	N	LEU B 155	5.874	17.816	22.109	1.00	1.00	B
ATOM	4046	CA	LEU B 155	6.029	16.359	22.087	1.00	1.00	B
ATOM	4047	CB	LEU B 155	5.055	15.686	23.064	1.00	1.00	B
ATOM	4048	CG	LEU B 155	5.260	16.046	24.536	1.00	1.00	B
ATOM	4049	CD1	LEU B 155	4.256	15.237	25.360	1.00	1.00	B
ATOM	4050	CD2	LEU B 155	6.686	15.757	24.980	1.00	1.00	B
ATOM	4051	C	LEU B 155	5.808	15.776	20.682	1.00	1.00	B
ATOM	4052	O	LEU B 155	6.177	14.613	20.431	1.00	1.00	B
ATOM	4177	N	THR B 172	9.112	11.246	22.902	1.00	1.00	B
ATOM	4178	CA	THR B 172	8.212	10.730	23.917	1.00	1.00	B
ATOM	4179	CB	THR B 172	8.776	11.014	25.344	1.00	1.00	B
ATOM	4180	OG1	THR B 172	7.931	10.400	26.328	1.00	1.00	B
ATOM	4181	CG2	THR B 172	8.870	12.532	25.619	1.00	1.00	B
ATOM	4182	C	THR B 172	6.805	11.269	23.709	1.00	1.00	B
ATOM	4183	O	THR B 172	6.588	12.352	23.145	1.00	1.00	B
ATOM	4192	N	GLY B 174	4.562	10.770	26.397	1.00	1.00	B
ATOM	4193	CA	GLY B 174	3.992	10.745	27.737	1.00	1.00	B
ATOM	4194	C	GLY B 174	3.762	9.337	28.266	1.00	1.00	B
ATOM	4195	O	GLY B 174	3.667	9.141	29.489	1.00	1.00	B
ATOM	4196	N	HIS B 175	3.650	8.349	27.375	1.00	1.00	B
ATOM	4197	CA	HIS B 175	3.440	6.953	27.796	1.00	1.00	B
ATOM	4198	CB	HIS B 175	2.313	6.309	26.977	1.00	1.00	B
ATOM	4199	CG	HIS B 175	0.992	6.997	27.119	1.00	1.00	B
ATOM	4200	CD2	HIS B 175	0.106	7.435	26.193	1.00	1.00	B
ATOM	4201	ND1	HIS B 175	0.420	7.255	28.345	1.00	1.00	B
ATOM	4202	CE1	HIS B 175	-0.763	7.817	28.170	1.00	1.00	B
ATOM	4203	NE2	HIS B 175	-0.977	7.938	26.875	1.00	1.00	B
ATOM	4204	C	HIS B 175	4.706	6.135	27.641	1.00	1.00	B
ATOM	4205	O	HIS B 175	4.990	5.212	28.403	1.00	1.00	B
ATOM	4206	N	ARG B 176	5.481	6.461	26.617	1.00	18.76	B
ATOM	4207	CA	ARG B 176	6.711	5.768	26.422	1.00	18.30	B
ATOM	4208	CB	ARG B 176	6.575	4.633	25.398	1.00	19.53	B
ATOM	4209	CG	ARG B 176	6.329	5.094	23.954	1.00	22.88	B
ATOM	4210	CD	ARG B 176	4.876	4.888	23.657	1.00	22.11	B
ATOM	4211	NE	ARG B 176	4.435	5.312	22.314	1.00	22.09	B
ATOM	4212	CZ	ARG B 176	4.555	4.591	21.202	1.00	20.17	B
ATOM	4213	NH1	ARG B 176	5.159	3.403	21.213	1.00	17.04	B
ATOM	4214	NH2	ARG B 176	3.914	4.977	20.120	1.00	20.02	B
ATOM	4215	C	ARG B 176	7.684	6.807	25.902	1.00	17.30	B
ATOM	4216	O	ARG B 176	7.255	7.860	25.374	1.00	18.10	B

ATOM	5703	CG	GLN	C	11	-1.047	4.361	29.231	0.76	1.00	C
ATOM	5704	CD	GLN	C	11	-0.039	3.245	29.174	0.76	1.00	C
ATOM	5705	OE1	GLN	C	11	-0.263	2.232	28.494	0.76	1.00	C
ATOM	5706	NE2	GLN	C	11	1.082	3.415	29.876	0.76	1.00	C
ATOM	5707	C	GLN	C	11	-1.895	4.396	32.038	0.76	1.00	C
ATOM	5708	O	GLN	C	11	-2.494	5.467	32.217	0.76	1.00	C
ATOM	5709	N	LEU	C	12	-0.732	4.111	32.618	0.76	1.00	C
ATOM	5710	CA	LEU	C	12	-0.065	5.046	33.519	0.76	1.00	C
ATOM	5711	CB	LEU	C	12	0.754	4.277	34.561	0.76	1.00	C
ATOM	5712	CG	LEU	C	12	-0.036	3.305	35.450	0.76	1.00	C
ATOM	5713	CD1	LEU	C	12	0.907	2.681	36.468	0.76	1.00	C
ATOM	5714	CD2	LEU	C	12	-1.184	4.040	36.153	0.76	1.00	C
ATOM	5715	C	LEU	C	12	0.845	5.948	32.680	0.76	1.00	C
ATOM	5716	O	LEU	C	12	1.111	5.653	31.510	0.76	1.00	C
ATOM	5717	N	VAL	C	13	1.317	7.044	33.273	0.76	1.00	C
ATOM	5718	CA	VAL	C	13	2.166	7.987	32.543	0.76	1.00	C
ATOM	5719	CB	VAL	C	13	1.473	9.371	32.386	0.76	1.00	C
ATOM	5720	CG1	VAL	C	13	0.217	9.239	31.523	0.76	1.00	C
ATOM	5721	CG2	VAL	C	13	1.113	9.929	33.750	0.76	1.00	C
ATOM	5722	C	VAL	C	13	3.542	8.211	33.174	0.76	1.00	C
ATOM	5723	O	VAL	C	13	3.740	8.050	34.381	0.76	1.00	C
ATOM	5724	N	LEU	C	14	4.498	8.596	32.339	0.76	1.00	C
ATOM	5725	CA	LEU	C	14	5.860	8.846	32.803	0.76	1.00	C
ATOM	5726	CB	LEU	C	14	6.836	8.819	31.619	0.76	1.00	C
ATOM	5727	CG	LEU	C	14	6.972	7.481	30.889	0.76	1.00	C
ATOM	5728	CD1	LEU	C	14	7.666	7.705	29.557	0.76	1.00	C
ATOM	5729	CD2	LEU	C	14	7.744	6.495	31.769	0.76	1.00	C
ATOM	5730	C	LEU	C	14	6.010	10.186	33.517	0.76	1.00	C
ATOM	5731	O	LEU	C	14	5.238	11.126	33.284	0.76	1.00	C
ATOM	5732	N	GLY	C	15	7.000	10.263	34.396	0.76	1.00	C
ATOM	5733	CA	GLY	C	15	7.264	11.510	35.090	0.76	1.00	C
ATOM	5734	C	GLY	C	15	8.263	12.275	34.234	0.76	1.00	C
ATOM	5735	O	GLY	C	15	9.472	12.210	34.462	0.76	1.00	C
ATOM	5736	N	LEU	C	16	7.750	12.995	33.241	0.76	1.00	C
ATOM	5737	CA	LEU	C	16	8.576	13.756	32.306	0.76	1.00	C
ATOM	5738	CB	LEU	C	16	7.732	14.157	31.094	0.76	1.00	C
ATOM	5739	CG	LEU	C	16	7.258	12.955	30.269	0.76	1.00	C
ATOM	5740	CD1	LEU	C	16	6.303	13.411	29.171	0.76	1.00	C
ATOM	5741	CD2	LEU	C	16	8.467	12.233	29.690	0.76	1.00	C
ATOM	5742	C	LEU	C	16	9.263	14.982	32.898	0.76	1.00	C
ATOM	5743	O	LEU	C	16	10.182	15.515	32.231	0.76	1.00	C
ATOM	5744	OXT	LEU	C	16	8.870	15.398	34.009	0.76	1.00	C
END											

wherein atoms 4045 to 5688 represent the peptide binding site, and atoms 5689 to 5748 represent the peptide of SEQ ID NO 1, said atoms 4045 to 5688 being comprised in the peptide binding site delimited by the amino acids 155 to 364 of the β subunit of DNA polymerase III of *Escherichia coli*, said peptide binding site having the amino acid sequence of SEQ ID NO 7.

25. (currently amended) A method to obtain a the protein crystal as defined in of claim 20, said method comprising the following steps:

- mixing a solution of processivity clamp factor of DNA polymerase the β subunit of DNA polymerase polymerase III of

Escherichia coli having the amino acid sequence of SEQ ID NO 5, with a solution of a the peptide of about 3 to about 30 amino acids, in particular of about 16 amino acids having the amino acid sequence of VTLLDPQMERQLVLGL (SEQ ID NO: 1), said peptide comprising all or part of the processivity clamp factor binding sequence of a processivity clamp factor interacting protein, such as prokaryotic Pol I, Pol II, Pol III, Pol IV, Pol V, MutS, ligase I, α subunit of DNA polymerase, UmuD or UmuD', or eukaryotic pol ϵ , pol δ , pol η , pol ι , pol κ , and with a solution of MES 2-(N-morpholino)ethane sulfonic acid (MES) at pH 6.0 0.2 M, CaCl₂ 0.2 M, PEG 400 60%, to obtain a crystallisation drop,

- letting the crystallisation drop concentrate against a solution of MES pH 6.0 0.1 M, CaCl₂ 0.1 M, PEG 400 30%, by vapour diffusion, to obtain a protein crystal.

26-37. (cancelled)